

## CLAIMS

What is claimed is:

11. A method of provoking light scattering sufficient to illuminate a specimen in an optical microscope system, said system comprising a visible-light microscope having a darkfield condenser, at least one objective lens, and a compound relay lens, said method comprising:

illuminating a lamp that emits a first light, wherein said first light travels at a frequency in the ultraviolet range of the electromagnetic spectrum;

focusing said first light upon said specimen using said darkfield condenser;  
and

magnifying the image of said specimen using said compound relay lens.

12. The method of claim 11, further comprising:

adapting said ultraviolet light for use in said microscope by positioning an adapter between said lamp and said darkfield condenser.

13. The method of claim 11, wherein said specimen is placed upon a slide and is covered by a cover glass, said method further comprising:

placing a lower oil drop on the underside center of said slide;

positioning said slide on the center of said darkfield condenser;

placing an upper oil drop on the top center of said cover glass;

raising said darkfield condenser until said upper oil drop contacts said objective lens.

23. A system for producing a first light wave traveling at a first frequency and a second light wave traveling at a second frequency from a single light source emitting an unrefined light wave, said system comprising:

a dual-channel filter configured to receive said unrefined light wave;

a dual-frequency filter controller connected to said dual-channel filter and configured to send a primary and a secondary control signal to said dual-channel filter,

said dual-channel filter configured to broadcast said first light wave on a first channel in response to said primary control signal and, in an alternating fashion, to broadcast said second light wave on a second channel in response to said secondary control signal.

24. The system of claim 23, wherein said primary control signal produces a first acoustic wave within said dual-channel filter, said first acoustic wave interacting with said unrefined light wave to produce said first light wave at said first frequency.

25. The system of claim 23, wherein said secondary control signal produces a second acoustic wave within said dual-channel filter, said second acoustic wave interacting with said unrefined light wave to produce said second light wave at said second frequency.

26. The system of claim 23, wherein said dual-frequency filter controller comprises:

- a primary radio frequency synthesizer;
  - a secondary radio frequency synthesizer; and
  - a driver connecting both of said primary and secondary radio frequency synthesizers to said dual-channel filter,
- said primary radio frequency synthesizer configured to synthesize and send a primary control signal via said driver to said dual-channel filter,
- said secondary radio frequency synthesizer configured to synthesize and send a secondary control signal via said driver to said dual-channel filter.